

# Preliminary report on spectinomycin HCl in the treatment of gonorrhoea in homosexual men

W. R. HOLDER, D. P. ROBERTS, W. C. DUNCAN, AND J. M. KNOX

Department of Dermatology and Syphilology, Baylor College of Medicine, Houston, Texas 77025, U.S.A.

Homosexuality plays an important role in the diagnosis, treatment, and epidemiology of venereal diseases. Jefferiss (1966) found that 89 (15 per cent.) of 604 males with gonorrhoea seen at St. Mary's Hospital in London admitted homosexual contact. Ekström (1970) found that 12 per cent. of 100 males aged 14 to 19 years who reported for treatment of venereal disease in Copenhagen had engaged in homosexual relations, most of them with more than ten different partners. In the same study, only 3.5 per cent. of the females of the same age group considered themselves to be homosexuals, and most of these were prostitutes. Racz (1970) found Hungarian male homosexuals to be more promiscuous than heterosexual males. In the United States, Webster (1970) found that male-to-male contacts accounted for 25.4 per cent. of cases of venereal diseases in men in 1968, whereas, female-to-female contacts accounted for only 1.6 per cent. of cases in women for the same year. He pointed out that male homosexuals represented a high-risk group for venereal disease in the United States, but there have been relatively few studies of gonorrhoea in the homosexual.

Fluker and Hewitt (1970) evaluated kanamycin and procaine penicillin in the treatment of a large number of cases of gonococcal proctitis in males. Diagnosis was based on the finding of typical intracellular Gram-negative diplococci in rectal smears; the same method was used for follow-up. Treatment failure was observed in 27 per cent. of those who received 1.8 m.u. procaine penicillin and 16 per cent. of those who received 2 g. kanamycin. By contrast, 35 cases of urethral gonorrhoea were treated with 2 g. kanamycin and the treatment failure rate was only 3 per cent.

Scott and Stone (1966) found rectal gonorrhoea in 36 (44 per cent.) of 82 passive homosexual males known to be gonorrhoea contacts. They felt that a higher dosage of penicillin was required to treat gonococcal proctitis than gonococcal urethritis. Sparling, Yobs, Billings, and Hackney (1966) found

spectinomycin sulphate (Actinospectacin) to be effective in the treatment of rectal gonorrhoea in women at a dose of 3 g. in a single injection. Aqueous procaine penicillin G, 2.4 m.u., was equivalent to the 3-g. dose of spectinomycin sulphate, each drug curing about 90 per cent. of the patients.

In the interest of evaluating alternative antibiotics in the treatment of gonococcal proctitis in the homosexual, we conducted a study with spectinomycin hydrochloride\* (Trobicin), a new antibiotic produced by the fermentation of *Streptomyces spectabilis*. The substitution of a hydrochloride salt for the original sulphate salt has made the antibiotic more suitable for injection because of its greater solubility.

## Material and methods

Fifteen male homosexual patients seen at the Houston City Social Hygiene Clinic were examined and specimens were cultured for diagnosis of gonorrhoea. Of these fifteen homosexuals, ten came to the clinic because of urethral discharge, three because of burning and discharge with bowel movements, and the other two because their sexual partners were known to have gonorrhoea. Specimens were taken from all patients from both the anterior urethra and the rectum, using sterile cotton tipped applicators inserted just into the anterior urethra, and for about 3 cm. into the rectum. These were streaked on Thayer-Martin medium and incubated overnight in a candle jar at 37°C. The diagnosis of gonorrhoea was confirmed by the finding of typical Gram-negative diplococci with a positive oxidase reaction and a sugar fermentation reaction for *Neisseria gonorrhoeae* in all cases. When diagnosed, all patients were treated with spectinomycin hydrochloride 2 g. intramuscularly in each buttock, a total dose of 4 g. They were instructed to return in 7 days, and all fifteen returned between 5 and 8 days.

## Results

Pre-treatment cultures revealed the presence of *Neisseria gonorrhoeae* from both the rectum and

urethra in nine of the fifteen patients (Table). Five had rectal gonorrhoea with a negative urethral culture, and one had urethral gonorrhoea with a negative rectal culture. There were thus 24 sites of infection. The ten patients with urethral gonorrhoea were all symptomatic. Only three of fourteen patients with rectal gonorrhoea had any symptoms or signs relating to the rectum. All three had slight rectal tenderness and a mucopurulent rectal discharge.

TABLE Sites of infection in 15 male homosexuals before and after treatment with 4 g. spectinomycin HCl

Culture	Number of patients with sites involved		
	Rectum only	Rectum and Urethra	Urethra only
Pre-treatment	5	9	1
Post-treatment	1	1	0

When re-examined by the same method after culture, twelve of fourteen rectal infections and nine of ten urethral infections were found to be cured, cultures for *Neisseria gonorrhoeae* being negative. Of the two treatment failures, one involved both the urethra and rectum and the other the rectum only; both men denied any possibility of re-infection. They were re-treated with 4.8 m.u. aqueous procaine penicillin G in a single injection. Upon return after 1 week both were asymptomatic with no positive physical findings, and cultures from both the rectum and the urethra were negative.

No side-effects due to therapy were noted in any of the patients. Two patients with a definite history of penicillin allergy were treated with spectinomycin hydrochloride without ill effects.

### Comment

The homosexual is asserting himself in to-day's society by acting more openly, and we must pay more attention to his importance in venereal disease transmission and control. It may be presumed that rectal gonorrhoea in the male is analogous to rectal gonorrhoea in the female, requiring and responding to the same therapeutic measures, but it is necessary to prove this by additional studies.

Pariser and Marino (1970) examined 56 suspected homosexual males and found that none had a urethral discharge, yet 31 (55.3 per cent.) had positive rectal cultures for gonorrhoea. They found that fourteen (3.5 per cent.) of 407 males seen routinely at their clinic had positive rectal cultures for gonorrhoea; thirteen of them were homosexuals.

In separate studies (to be published) 2 g. spectinomycin hydrochloride resulted in cure in 90 per cent. of cases of acute gonococcal urethritis in men, while 4 g. cured 93 per cent.; in a series of females with rectal gonorrhoea, 94 per cent. were cured by 4 g. spectinomycin hydrochloride.

It therefore appears that gonococcal proctitis of the homosexual male responds as well to 4 g. spectinomycin hydrochloride as does gonococcal proctitis in the female, the cure rate being above 90 per cent. In view of the well-recognized promiscuity of the homosexual male, it would appear that rectal gonorrhoea in men is more likely to spread infection than gonococcal proctitis in women.

Fiumara, Wise and Many (1967) described three cases of gonococcal pharyngitis among fourteen homosexual males, one of whom also had gonococcal urethritis, but there was no mention of rectal cultures. Unfortunately, we did not obtain oral cultures from the males studied. The present study emphasizes the necessity of rectal culture for the diagnosis of gonorrhoea in the homosexual male, since more had gonococcal proctitis (14 of 15) than gonococcal urethritis (10 of 15).

### Summary

In a preliminary trial of spectinomycin hydrochloride, fifteen male homosexual patients with culturally proven gonorrhoea were investigated.

Fourteen of the fifteen patients had gonococcal proctitis. Both the urethra and rectum were infected in nine patients. Five had rectal gonorrhoea without urethral involvement, and one had only gonococcal urethritis. Treatment with 4 g. spectinomycin hydrochloride given intramuscularly resulted in cure of thirteen of the fifteen cases. There was one case of treatment failure at both the rectal and urethral sites and one in the group with rectal gonorrhoea only. The importance of rectal culture in the homosexual male is stressed.

### References

- EKSTRÖM, K. (1970) *Brit. J. vener. Dis.*, **46**, 93
- FIUMARA, N. J., WISE, H. M., and MANY, M. (1967) *New Engl. J. Med.*, **276**, 1248
- FLUKER, J. L., and HEWITT, A. B. (1970) *Brit. J. vener. Dis.*, **46**, 454
- JEFFERISS, F. J. G. (1966) *Ibid.*, **42**, 46
- PARISER, H., and MARINO, A. F. (1970) *Sth. med. J.* **63**, 198
- RACZ, I. (1970) *Brit. J. vener. Dis.*, **46**, 117
- SCOTT, J., and STONE, A. H. (1966) *Ibid.*, **42**, 103
- SPARLING, P. F., YOBBS, A. R., BILLINGS, T. E., and HACKNEY, J. R. (1966) "Antimicrobial Agents and

Chemotherapy—1965", in "Interscience Conference on Antimicrobial Agents and Chemotherapy", ed. G. L. Hobby, p. 689. American Society for Microbiology

WEBSTER, B. (1970) *Brit. J. vener. Dis.*, **46**, 406

**Rapport préliminaire sur le traitement de la gonococcie avec le chlorydrate de spectinomycine**

**SOMMAIRE**

On rapporte un essai préliminaire du chlorydrate de spectinomycine chez 15 homosexuels masculins dont la

gonococcie avait été prouvée par culture.

Quatorze de ces 15 hommes avaient une rectite gonococcique. Chez 9 malades, l'urètre et le rectum étaient à la fois infectés. Cinq avaient une gonococcie rectale sans participation urétrale et un avait seulement une urétrite gonococcique. Le traitement par 4 g. de HCl de spectinomycine par voie intramusculaire guérit 13 des 15 cas. Il y eut un échec dans un cas où les gonocoques étaient présents à la fois dans le rectum et dans l'urètre et chez un autre dans le groupe des sujets ayant seulement une gonococcie rectale. On souligne l'importance de la culture rectale chez les homosexuels masculins.